

- Topics:** Fish oil, long chain Omega-3 polyunsaturated fatty acids, docosahexaenoic acid (DHA), eicosapentaenoic acid (EPA), age related cognitive decline, Alzheimer Disease (AD), vascular dementia.
- Objective:** To examine the association between fish consumption, the intake of omega-3 long chain polyunsaturated fatty acids, EPA and DHA, from fish and other foods, and subsequent development of cognitive decline 5 years later.
- Background:** DHA is a long chain omega-3 polyunsaturated fatty acid and is one of the most abundant fatty acids in the brain. Some previous studies have reported the content of DHA is lower than normal in brain and plasma of patients with dementia. Cross-sectional studies have linked low DHA status with dementia while prospective studies have linked dementia and Alzheimer disease with decreased fish intake. Dietary DHA and its direct precursor, EPA, comes mainly from fish.
- Method:** The intake of EPA and DHA was calculated from consumption data from 210 male participants aged 70-89 years in the Zutphen Elderly Study. Cognitive function was measured five years later using the Mini-Mental State Examination (MMSE). Multivariate linear regression analysis with multiple adjustments was used to assess associations.
- Findings:** Those who ate fish had significantly less ( $p=0.01$ ) cognitive decline than non-consumers. The relationship between intake of EPA+DHA and cognitive decline was linear. 380 mg/d of EPA+DHA was associated with a 1.1 point difference in cognitive decline ( $P=0.01$ ).
- Conclusion:** A moderate intake of EPA+DHA may postpone cognitive decline in elderly men.
- Relevance to:** Efalex Active 50+
- Reference:** van Gelder BM, Tijhuis M, Kalmijn S, Kromhout D. Fish consumption, n-3 fatty acids and subsequent 5 year cognitive decline in elderly men: the Zutphen Elderly Study. *Am J Clin Nutr* 2007 Apr;85(4):1142-7.

**PRESS RELEASE****Two new studies show that high Omega-3 fatty acid intake slows mental decline associated with aging.**

In recent years, a number of studies have focused on potential benefits of regular consumption of fish containing omega-3 long chain polyunsaturated fatty acids (LC-PUFAs) to maintain or enhance brain function with respect to dementia, but only a few have looked at the impact on cognitive decline that occurs before development of the more debilitating condition. But two studies just published in the *American Journal of Clinical Nutrition* report that regular intake of omega-3 LC-PUFA rich food could prevent age-related cognitive decline.

The first study<sup>1</sup> from the Dutch National Institute for Public Health and the Environment included 210 men from the Zutphen Elderly Study who were not suffering from any form of dementia. Historical dietary intake was assessed when the men were 70-89 years old and cognitive function was measured using the Mini-Mental State Examination (MMSE). Men who consumed about 400 mg of omega-3 LC-PUFAs [eicosapentaenoic acid (EPA) and docosahexaenoic acid (DHA)] per day had less cognitive decline in a five year period than those who ate only about 20 mg per day of these nutrients.

The second study<sup>2</sup> from the University of North Carolina included 2251 white adults with an average age of 57 years at the start of the study. Blood fatty acid composition was measured initially and cognitive function was determined three and nine years later to evaluate verbal learning, recent memory, psychomotor performance, linguistic impairment and global cognition. The results, taking into consideration a number of interfering variables, showed that higher blood levels of omega-3 LC-PUFA prevented deterioration in verbal fluency. This was particularly apparent in people with high blood pressure and high blood triglyceride and/or cholesterol levels.

In November 2006, the Framingham Heart Study which followed 899 initially healthy volunteers with a median age of 76 years<sup>3</sup> showed that people who ate two or more servings of fish per week were 39 percent less likely to develop dementia, but those who ate less than that did not derive any benefit. Although oily fish contains many different fatty acids, it was only the docosahexaenoic acid (DHA) that was responsible for preventing dementia.

All of these studies add to the growing body of information linking the benefits of DHA to brain function in aging people. Population studies have shown that DHA levels are lower than normal in people with various forms of age related cognitive decline<sup>4,5</sup>. Other studies have shown that low DHA status is associated with the development of Alzheimer's disease<sup>6</sup> while high dietary fish intake<sup>7</sup> and specifically DHA intake<sup>8</sup> is associated with a lower incidence of cognitive decline and Alzheimer's disease respectively. Clinical studies providing DHA supplements have measured significant improvements in people with vascular dementia<sup>9</sup> and have shown they can delay the rate of cognitive decline in patients with very mild Alzheimer Disease<sup>10</sup>. These new studies clearly confirm low omega-3 LC-PUFA status is a risk factor for developing age related cognitive decline and demonstrate the importance of maintaining an adequate intake of these vital nutrients in adulthood to prevent mental deterioration.

**References:**

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